1989 U.S. User Survey Results

Robert L. Goodwin
Vice President
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1989 User Surveys

- Large systems
- Mid-range systems
- PC/workstations
- Third-party maintenance

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Notes

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1989 INPUT Research Base

User Research	No. of Surveys
Large system users	374
Mid-range system users	399
PC/workstation users	178
TPM users	184
Total users	1,135

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User Surveys

- Large systems

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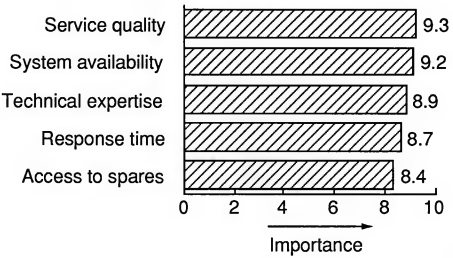
Service Vendor Selection Criteria
Large Systems



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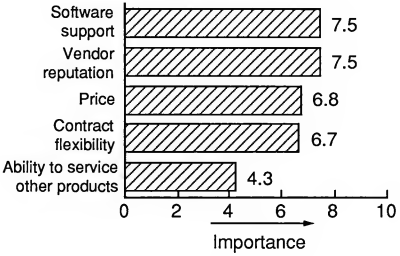
Service Vendor Selection Criteria
Large Systems



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Notes

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Service Contract Coverage
All Large Systems

Contract Component	Sample Responding (Percent)	
	1988	1989
• Days of coverage		
- Monday - Friday	46	45
- Monday - Saturday	2	1
- Monday - Sunday	52	54

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Notes

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Service Contract Coverage
All Large Systems

Contract Component	Sample Responding (Percent)	
	1988	1989
• Hours of coverage		
- 1 to 9 hours	34	41
- 10 to 16 hours	11	6
- 17 to 24 hours	55	53

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Notes

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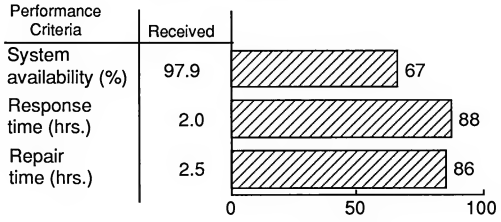
System Availability Analysis
All Large Systems



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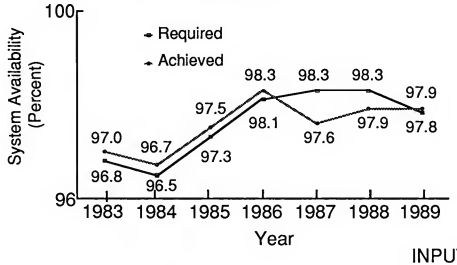
Large Systems System Availability 1983-1989



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Notes

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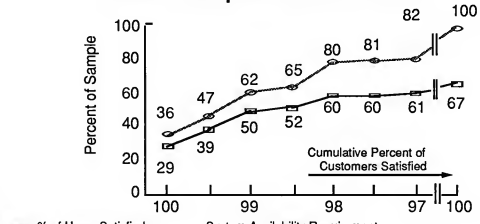
System Availability Satisfaction at Each Requirement Level



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Notes

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System Interruption Analysis—All Large Systems

• System Interruptions (Per month)	.9
	Percent
- Hardware-caused	63
- System software-caused	16
- Application software-caused	5
- Other-caused	16

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Notes

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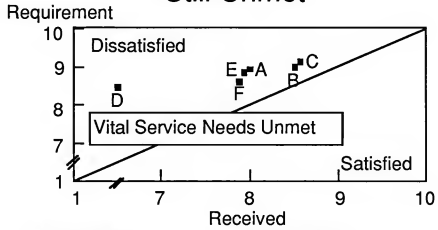
Large Systems User Needs Still Unmet



A = Parts Availability
B = HW Eng. Skill
C = Overall HW Support
D = SW Documentation
E = SW Eng. Skill Level
F = Overall SW Support

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Notes

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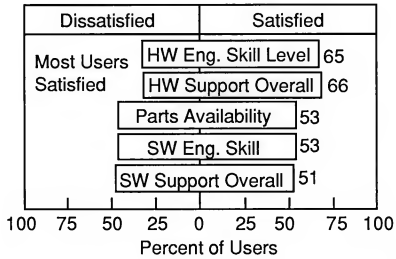
Large Systems User Satisfaction with High-Priority Services



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Notes

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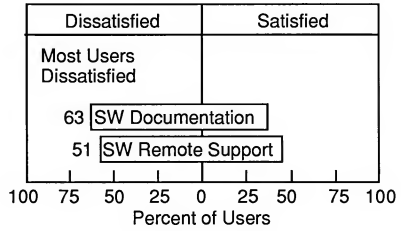
Large Systems User Satisfaction with High-Priority Services



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Notes

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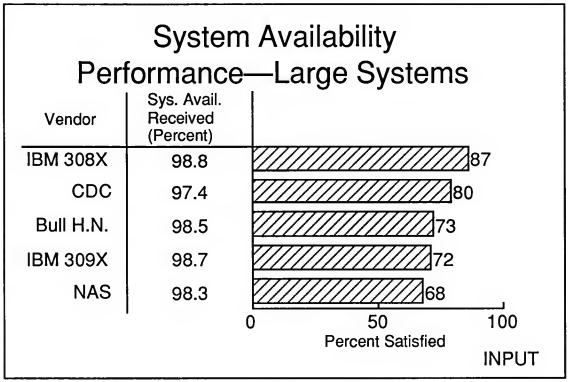

Notes

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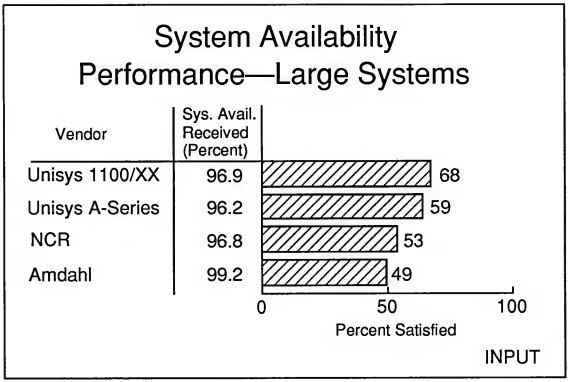

Notes

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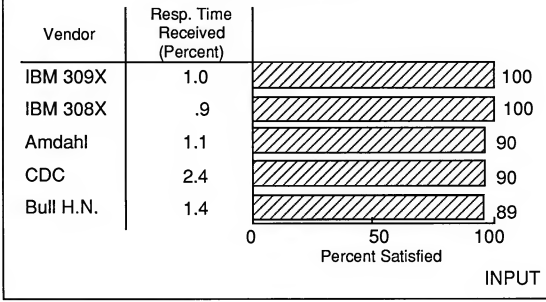
Response Time Performance
Large Systems



Notes

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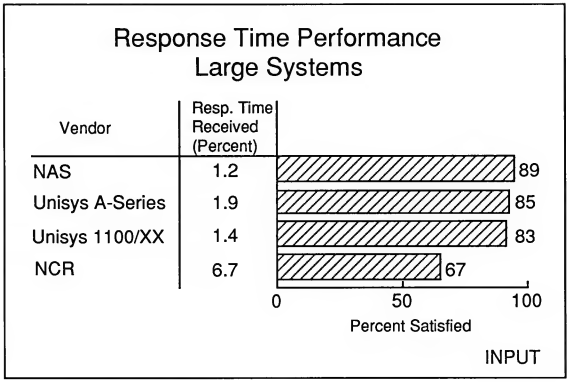

Notes

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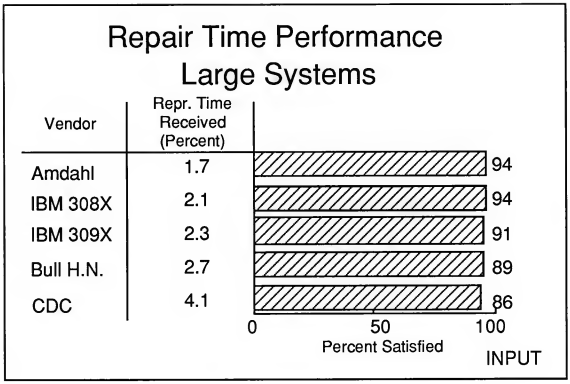

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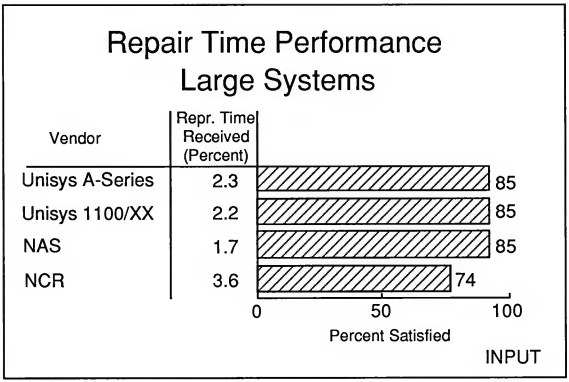

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User Surveys

Mid-Range Systems

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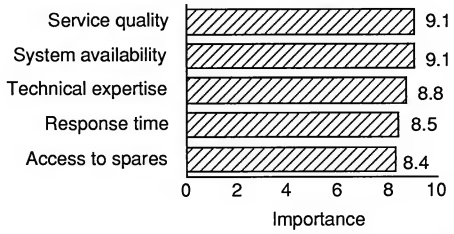
Service Vendor Selection Criteria
Mid-Range Systems



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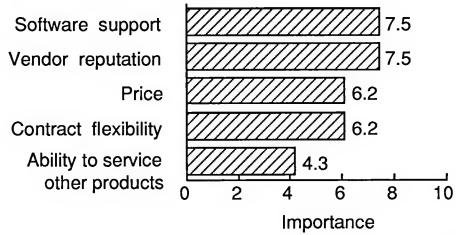
Service Vendor Selection Criteria
Mid-Range Systems



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Notes

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Service Contract Coverage
All Mid-Range Systems

Contract Component	Sample Responding (Percent)	
	1988	1989
• Days of coverage		
- Monday - Friday	66	64
- Monday - Saturday	4	3
- Monday - Sunday	30	33

INPUT

Notes

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Service Contract Coverage
All Mid-Range Systems

Contract Component	Sample Responding (Percent)	
	1988	1989
• Hours of coverage		
- 1 to 9 hours	54	56
- 10 to 16 hours	14	13
- 17 to 24 hours	32	31

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Notes

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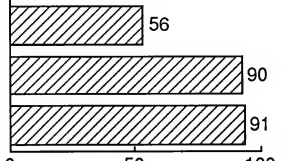
System Availability Analysis
All Mid-Range Systems

Performance Criteria	Received
System availability (%)	97.4
Response time (hrs.)	3.9
Repair time (hrs.)	4.0



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Notes

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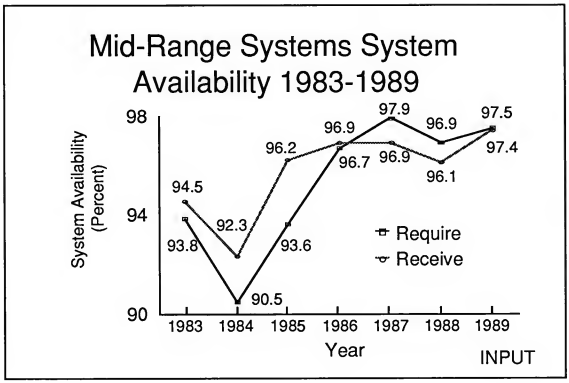

Notes

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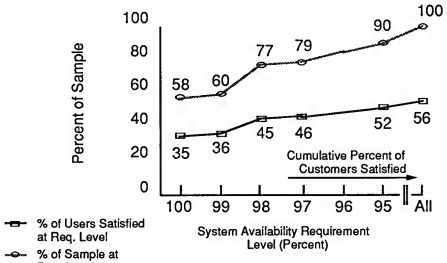
System Availability Satisfaction at Each Requirement Level—All Mid-Range Systems



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Notes

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System Interruption Analysis
All Mid-Range Systems

System Interruptions (Per month)	.59
	Percent
Hardware-caused	63
System software-caused	13
Application software-caused	4
Other-caused	20

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Notes

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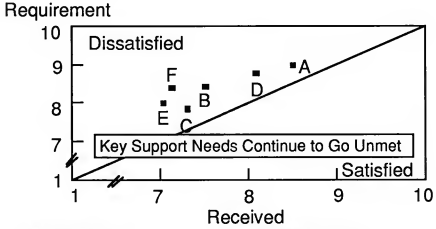
Key Service Requirements vs. Received
All Mid-Range Systems



A = HW Maintenance
B = SW Support
C = HW Remote Support
D = Spare Parts Availability
E = SW Remote Support
F = SW Documentation

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Notes

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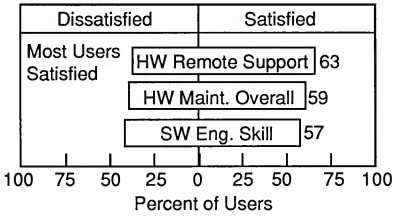
Mid-Range Systems User Satisfaction with High-Priority Services



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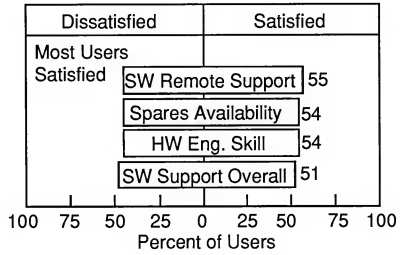
Mid-Range System User Satisfaction with High-Priority Services



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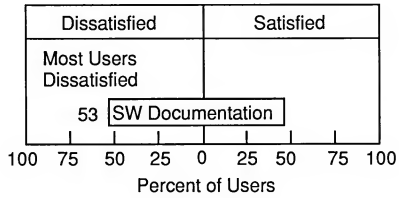
Mid-Range System User Satisfaction with High-Priority Services



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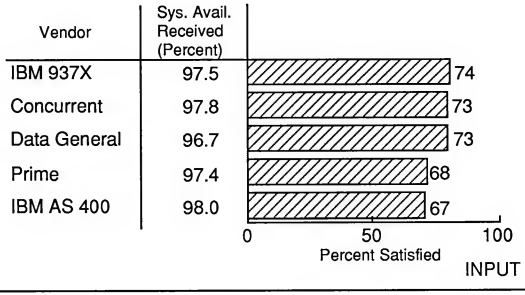
System Availability Performance
Mid-Range Systems



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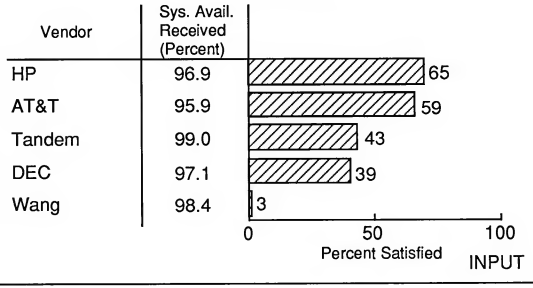
System Availability Performance
Mid-Range Systems



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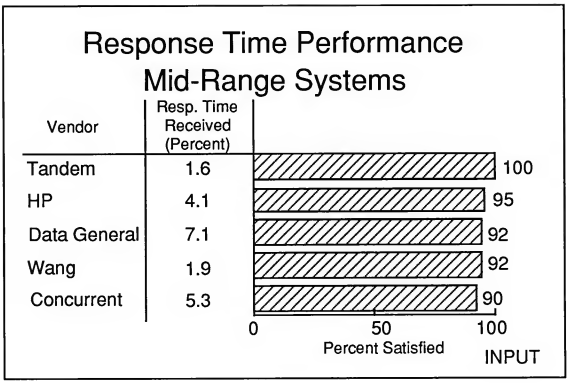

Notes

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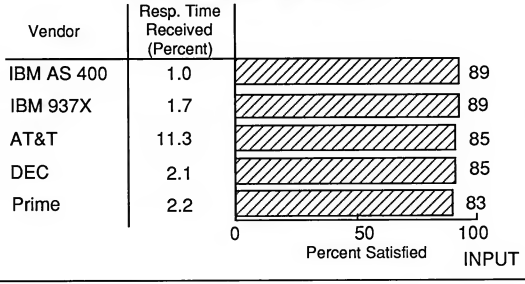
Response Time Performance
Mid-Range Systems



Notes

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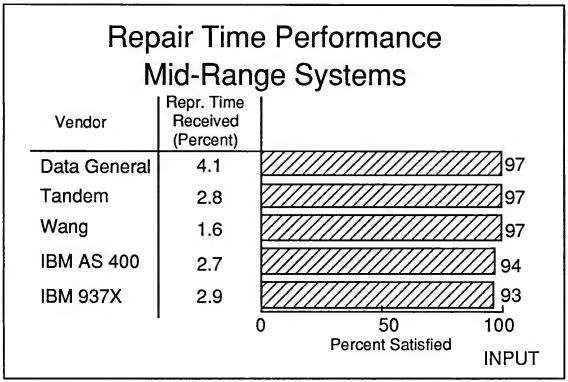

Notes

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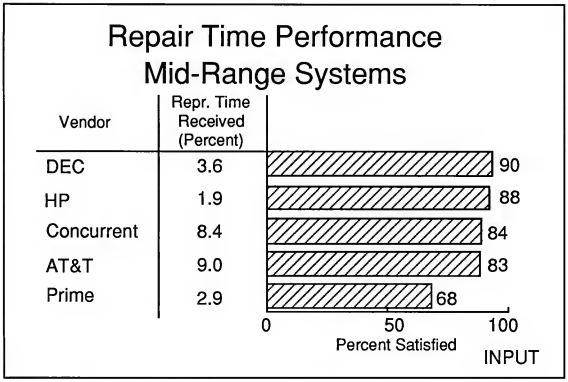

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User Surveys

Third-Party Maintenance

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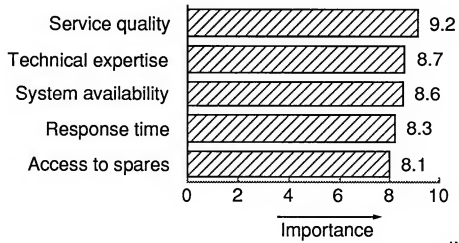
Service Vendor Selection Criteria
Third-Party Maintainers



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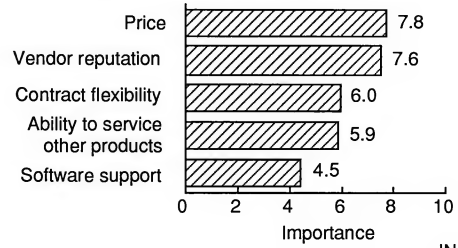
Service Vendor Selection Criteria
Third-Party Maintainers



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Notes

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TPM Contract Coverage
All Users

Service Coverage	Sample (Percent) 1988	1989
• Days of Coverage		
Monday - Friday	71	64
Monday - Saturday	4	2
Monday - Sunday	25	34

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Notes

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TPM Contract Coverage
All Users

Service Coverage	Sample (Percent) 1988	1989
• Hours of Coverage		
1 - 9 hours	62	53
10 - 16 hours	9	12
17 - 24 hours	29	35

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Notes

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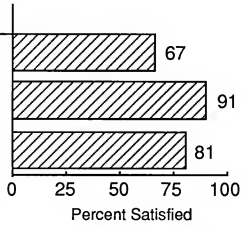
TPM System Availability Analysis
All Users

Component	Require	Receive
System availability (%)	94.4	95.9
Response time (hrs.)	5.0	3.9
Repair time (hrs.)	7.8	6.1



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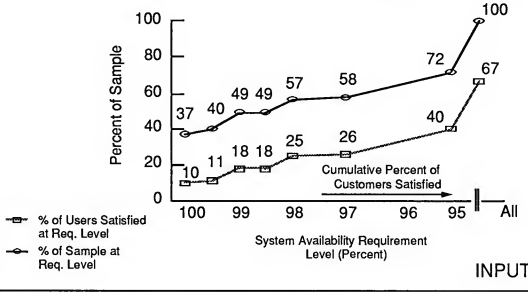
TPM System Availability Satisfaction at Each Requirement Level—All Users



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Notes

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TPM System Interruption Analysis—All Users

System Interruptions (per month)	1.2
	Percent
Hardware-caused	66
System software-caused	9
Applications software-caused	5
Other (i.e., user-caused)	20

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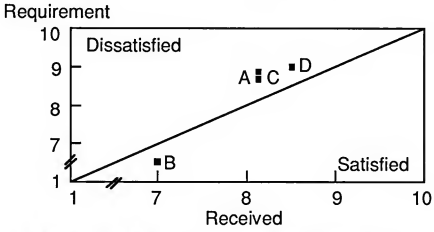
TPM Hardware Maintenance Required vs. Received—All Users



A = Hardware Engineer Skill
B = Hardware Remote Support
C = Spare Parts Availability
D = Overall Hardware Maintenance

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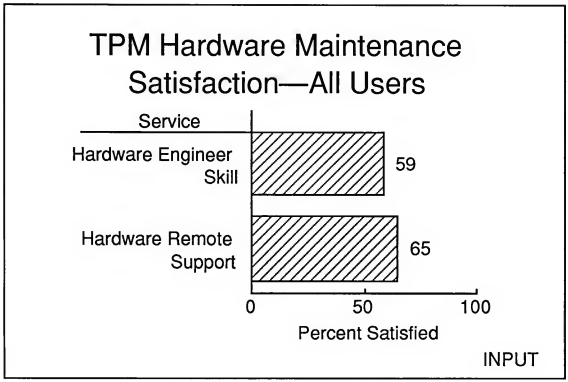

Notes

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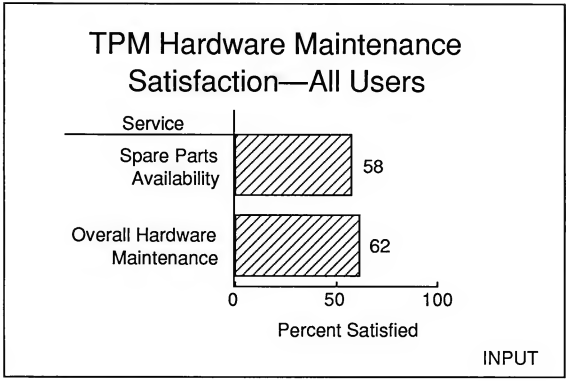

Notes

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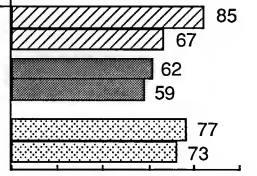
TPM Versus Manufacturer System Availability Performance

Vendor Type	(Percent) Req.	Rec.
TPM	97.3	99.0
MFR	97.8	97.9
TPM	94.7	95.5
MFR	97.4	97.3
TPM	92.5	96.4
MFR	94.0	95.7



- PC/WS
- Mid-Range System
- Large System

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Notes

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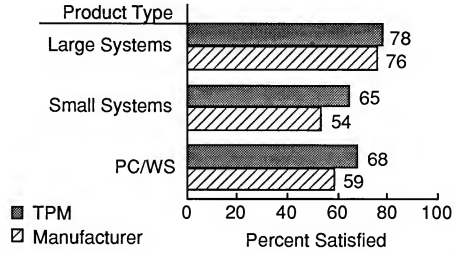
User Satisfaction With Hardware Maintenance—TPM Versus Manufacturer



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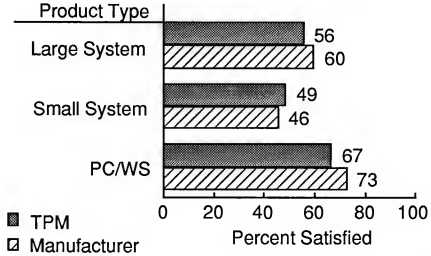
User Satisfaction with Parts Availability TPM Versus Manufacturer



INPUT

Notes

FSEM-BG-53

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User Surveys

PC/Workstations

INPUT

Notes

FSEM-BG-54

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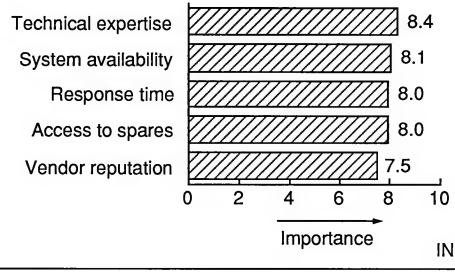
Service Vendor Selection Criteria
PC/Workstation



Notes

FSEM-BG-55

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Service Vendor Selection Criteria
PC/Workstation

Notes

FSEM-BG-56

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Service Contract Coverage
PC/Workstations

Days Covered	Percent of Sample — 1989
Monday - Friday	76
Monday - Saturday	1
Monday - Sunday	23

INPUT

Notes

FSEM-BG-57

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Service Contract Coverage
PC/Workstations

Hours Covered	Percent of Sample —1989
1 - 9	75
10 - 16	4
17 - 24	21

INPUT

Notes

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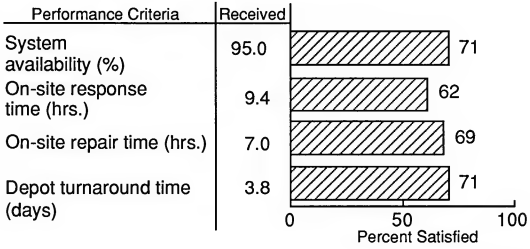
System Availability Analysis
PC/Workstations



INPUT

Notes

FSEM-BG-59

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System Availability Performance Analysis PC/Workstations

	MFC	Dealers	TPM
System availability (%)	95.7	95.0	94.5
Response time (hrs.)	11.3	11.1	7.1
Repair time (hrs.)	6.9	3.9	8.9
Depot turnaround (days)	4.6	2.2	3.3

INPUT

Notes

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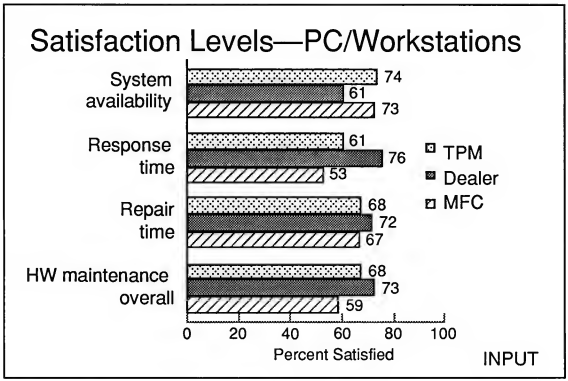

Notes

FSEM-BG-61

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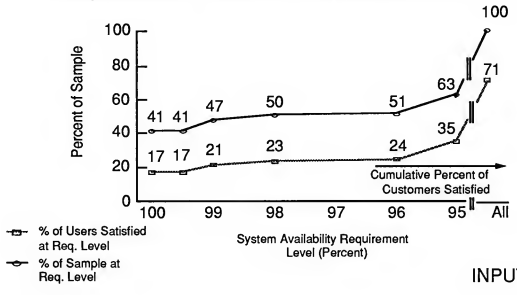
System Availability Satisfaction at Each Requirement Level—PC/Workstations



INPUT

Notes

FSEM-BG-62

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System Interruption Analysis
PC/Workstations

	Mean (1989)
System interruptions per month	1.3
Hardware-caused	77.0
System software-caused	8.0
Application software-caused	5.0
Other-caused	10.0

INPUT

Notes

FSEM-BG-63

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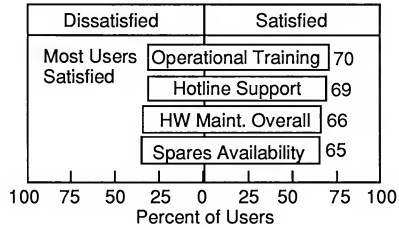
PC/Workstation User Satisfaction with High-Priority Services



INPUT

Notes

FSEM-BG-65

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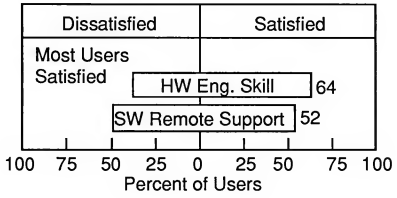
PC/Workstation User Satisfaction with High-Priority Services



INPUT

Notes

FSEM-BG-66

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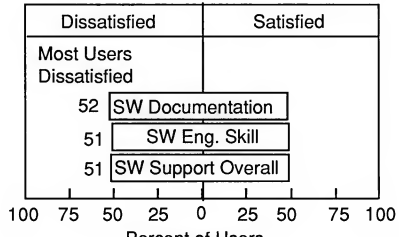
PC/Workstation User Satisfaction with High-Priority Services



INPUT

Notes

FSEM-BG-67

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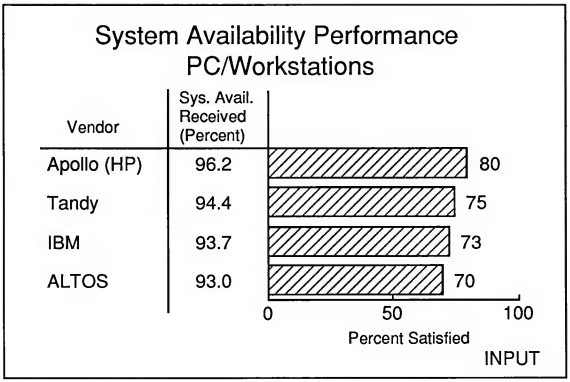

Notes

FSEM-BG-68

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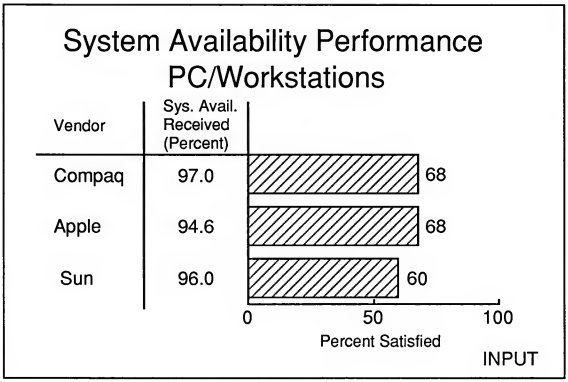

Notes

FSEM-BG-69

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Robert L. Goodwin
Vice President
Western Operation

PROFILE

CAPABILITIES

- Twenty-five years successful sales, marketing, and general management in the computer equipment, remote processing services and software industries.
- Expertise in business plan development, strategic partnering and acquisitions, industry marketing, VAR and reseller operations.

BACKGROUND

- Robert (Bob) Goodwin brings to INPUT and its clients comprehensive experience in executive management in large and mid-size corporations.
- Most recently he has served as President of COMMAND DATA SYSTEMS, a public safety software and turnkey systems vendor. With Bob's leadership and marketing strategy, CDS became a highly visible and respected vertical market leader.
- Bob's qualifications include the role of Director of Marketing for Xerox Computer Services, in support of all field sales and customer services activities.
- IBM utilized Bob's skills as Branch Manager and Assistant District Manager.

EDUCATION

- B.A., Psychology, Occidental College.
- Attended the MBA program, Golden Gate University.

TITLE

Bob Goodwin

10/16/89

TO: Andrea Jeris
INPUT
MT View

From: Buddy Stigler

Attached are the pages for the slide presentation that Bob Goodwin will make on the 2nd day of my conference -

I tried to use existing slide formats where possible to simplify the production process. There are 69 slides in the presentation.

Thanks!!!

Buddy

1989

User Surveys

- Large Systems
- Mid-Range Systems
- PC/Workstations
- Third Party Maintenance

INPUT

NOTES:

FPRB-21

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~~1988~~ 1989 INPUT Research Base

User Research	No. of Surveys
Large System Users	~~381~~ 374
~~Small~~ Mid-range System Users	~~399~~ 399
PC/Workstation USERS	178
TPM Users	~~200~~ 184
Total Users	~~980~~ 1135

INPUT

NOTES:

FPRB-22a

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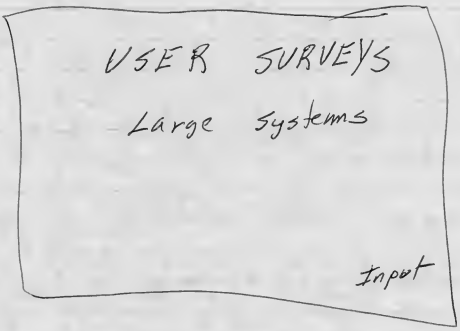
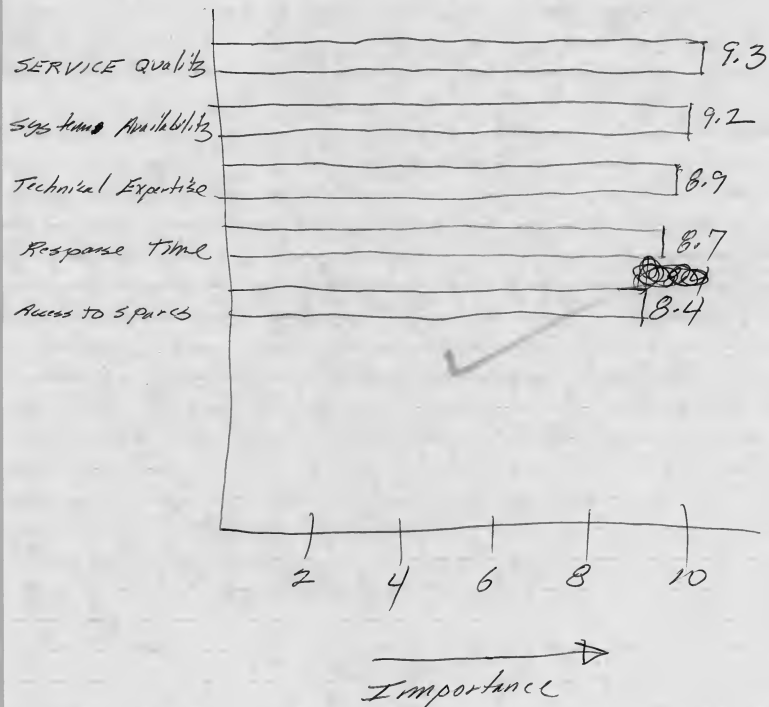


Notes:

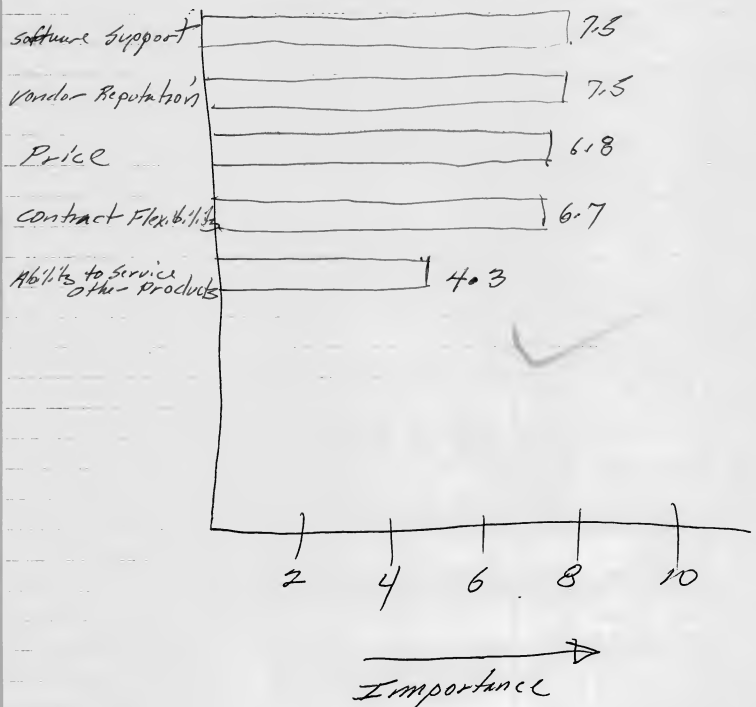
SERVICE VENDOR SELECTION CRITERIA

LARGE SYSTEMS



SERVICE VENDOR SELECTION CRITERIA

LARGE SYSTEMS



Service Contract Coverage
All Large-Systems

Contract Component	Sample Responding (Percent) 1988	1989
• Days of coverage		
- Monday – Friday	46	45
- Monday – Saturday	2	1
- Monday – Sunday	52	54

INPUT

NOTES:

FPRB-23a

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Service Contract Coverage
All Large-Systems

Contract Component	Sample Responding (Percent) 1987	1988	1989
• Hours of coverage			
- 1 to 9 hours	[illegible]	34	41
- 10 to 16 hours	[illegible]	11	6
- 17 to 24 hours	[illegible]	55	53

INPUT

NOTES:

FPRB-23b

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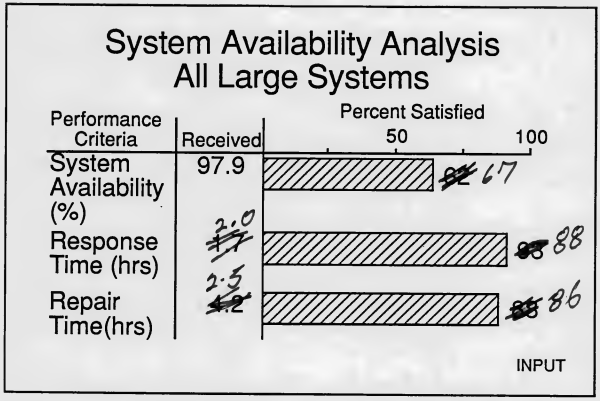

NOTES:

FPRB-24

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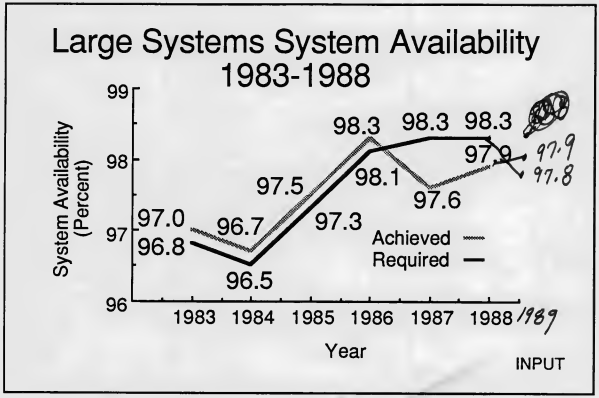

NOTES:

FPRB-25

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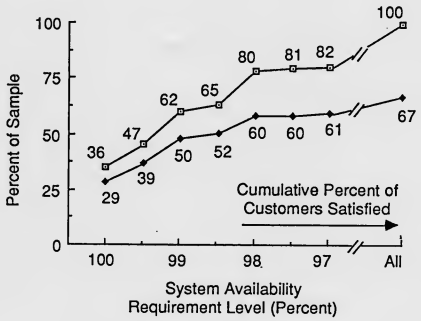
Availability Satisfaction Increases

In 1989, large-system users reported that they received system availability of 97.9%, versus an expressed requirement of 97.8%. As stated in the previous section, user requirements for system availability dropped in 1989 (from 98.3% in 1988 to 97.8% in 1989), contributing to increased satisfaction with system availability in 1989, with 67% of the large-systems sample satisfied with system availability (up from 62% in 1988).

Exhibit II-3 presents the percentage of users who require system availability at each requirement level, as well as the cumulative percentage of users who are satisfied at each requirement level. For example, 36% of the 1989 large-systems users surveyed reported that they require 100% system availability. Of those users, the large-systems vendors were able to satisfy 29%. Sixty-two percent of the users require 99% system availability or better, and large-systems vendors were able to satisfy 50% of those users.

EXHIBIT II-3

SYSTEM AVAILABILITY SATISFACTION AT EACH REQUIREMENT LEVEL



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System Interruption Analysis—All Large Systems

• Systems Interruptions (per month)	~~16~~ 9
	Percent
- Hardware caused	~~49~~ 63
- System Software caused	~~21~~ 16
- Application Software caused	~~11~~ 5
- Other caused	19 16

INPUT

NOTES:

FPRB-27

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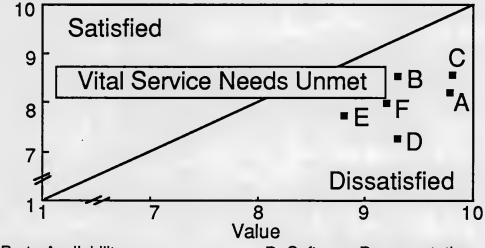
Large-Systems User Needs Still Unmet



A=Parts Availability
B=Hardware Engineering Skill Level
C=Overall Hardware Support
D=Software Documentation
E=Software Engineering Skill Level
F=Overall Software Support

INPUT

NOTES: Replot above for 1989

	Required	Received
A Parts Avail	8.9	8.8
B HW Eng Skill	9.0	8.3
C Overall HW support	9.1	8.6
D SW Documentation	8.4	6.8
E SW Eng Skill Level	8.8	7.9
F Overall SW Support	8.6	7.8

FPRB-28

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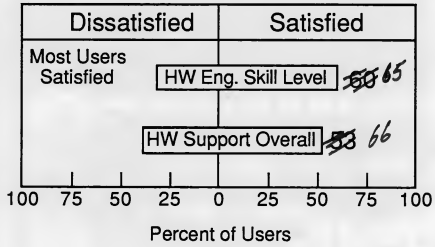
Large System User Satisfaction with High-Priority Services



INPUT

NOTES:

Add to Above

Parts Availability 53

SW Eng Skill 53

SW support overall 51

Satisfied

FPRB-29a

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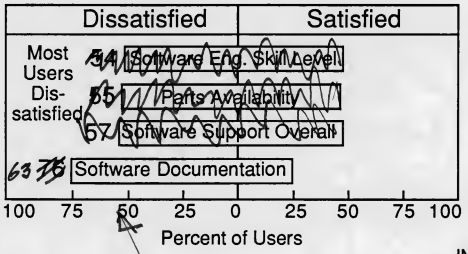
Large System User Satisfaction with High-Priority Services



INPUT

NOTES: add to above

SW Remote Support 51 (dissatisfied)

FPRB-29b

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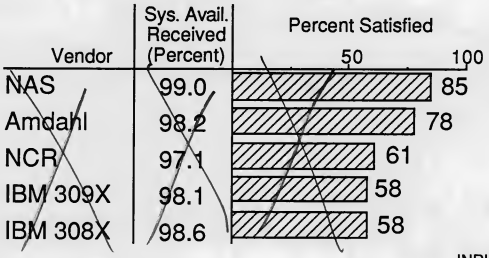
Systems Availability Performance—Large Systems



NOTES:

	Received	%
IBM 308X	98.8	87
CDC	97.4	80
Bull H.N.	98.5	73
IBM 309X	98.7	72
NAS	983	68

FPRB-31

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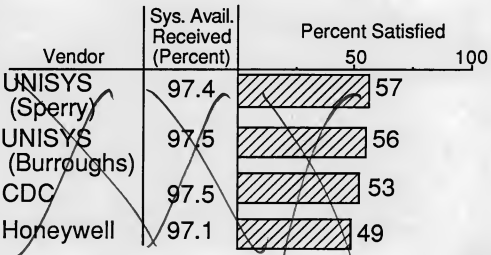
Systems Availability Performance—Large Systems



update

NOTES:

UNISYS 1100/xx	96.9	68
UNISYS A-series	96.2	59
NCR	96.8	53
Amdahl	99.2	49

FPRB-32

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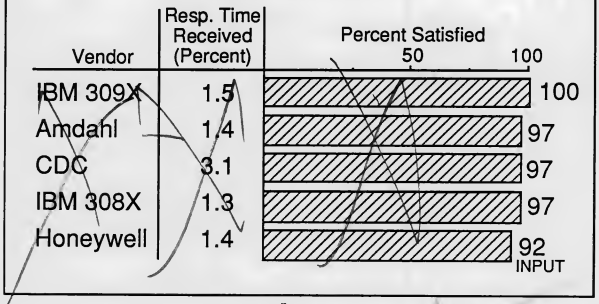
Response Time Performance—Large Systems



NOTES:

	Received	%
IBM 309X	1.0	100
IBM 308X	.9	106
Amdahl	1.1	90
CDC	2.4	90
Bull H.N	1.4	89

FPRB-33

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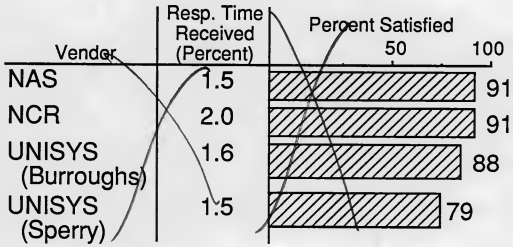
Response Time Performance—Large Systems



INPUT

NOTES:

	Received	%0
NAS	1.2	89
UNISYS A-Series	1.9	85
UNISYS 1100/XX	1.4	83
NCR	6.7	67

FPRB-34

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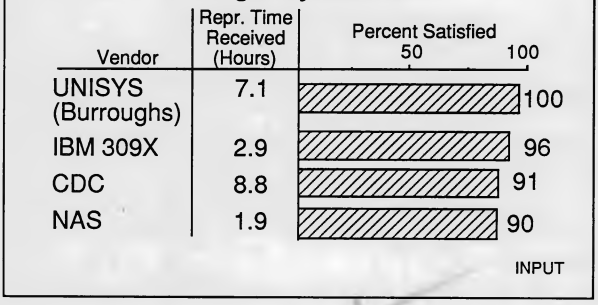
Repair Time Performance—Large Systems



Received | Up

NOTES:

Amdahl	1.7	94
IBM 308X	2.1	94
IBM 309X	2.3	91
Bull H.N.	2.7	89
CDC	4.1	86

FPRB-35

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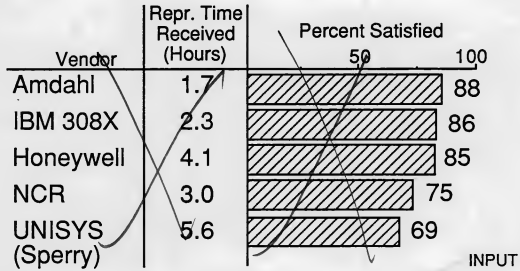
Repair Time Performance—Large Systems



NOTES:

	Received	%
UNISYS A-Series	2.3	85
UNISYS 1100/XX	2.2	85
WAS	1.7	85
NCR	3.6	74

FPRB-36

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User Surveys

Mid-Range ~~Small~~ Systems

INPUT

NOTES:

FPRB-37

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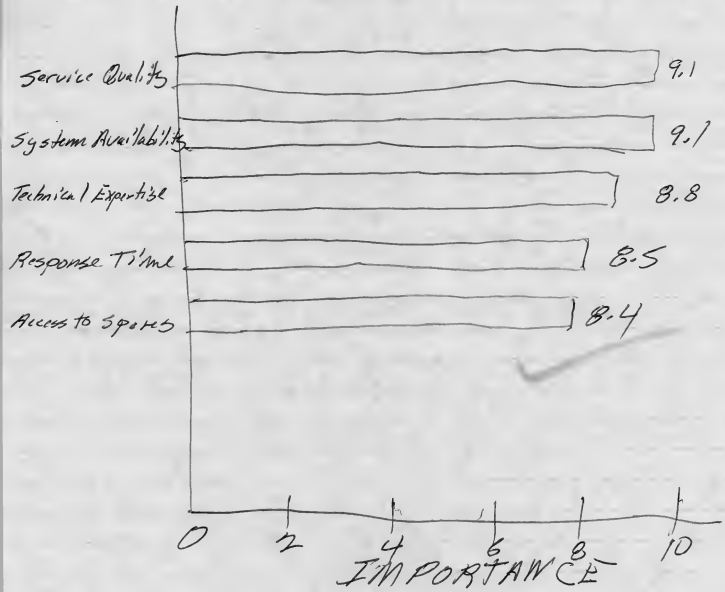
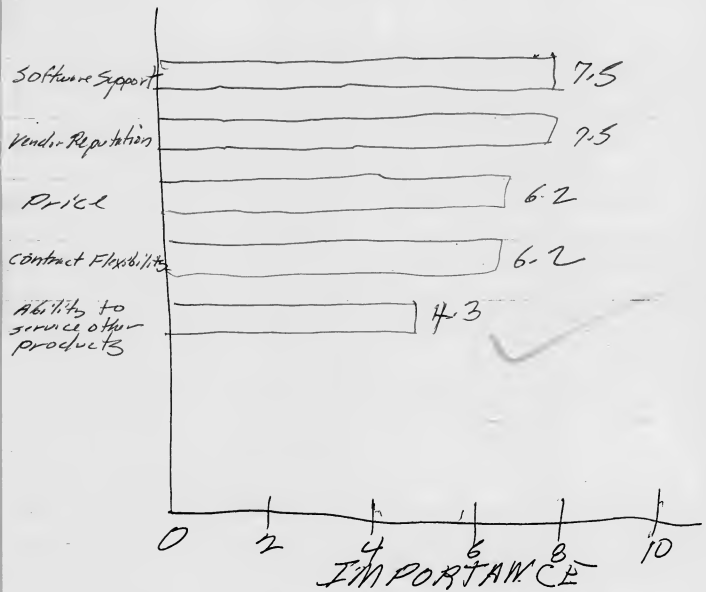
SERVICE VENDOR SELECTION CRITERIA

Mid-RANGE Systems



SERVICE VENDOR SELECTION CRITERIA

Mid-RANGE Systems



Service Contract Coverage
All ~~Small~~ Mid-Range Systems

Contract Component	Sample Responding (Percent) 1988	1989
Days of Coverage		
Monday – Friday	~~66~~	64
Monday – Saturday	4	3
Monday – Sunday	30	33

INPUT

NOTES:

FPRB-38a

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Service Contract Coverage
All ~~Small~~ Mid-Range Systems

Contract Component	Sample Responding (Percent)	
Hours of Coverage	1988	1989
1–9 Hours	54	56
10–16 Hours	14	13
17–24 Hours	32	31

INPUT

NOTES:

FPRB-38b

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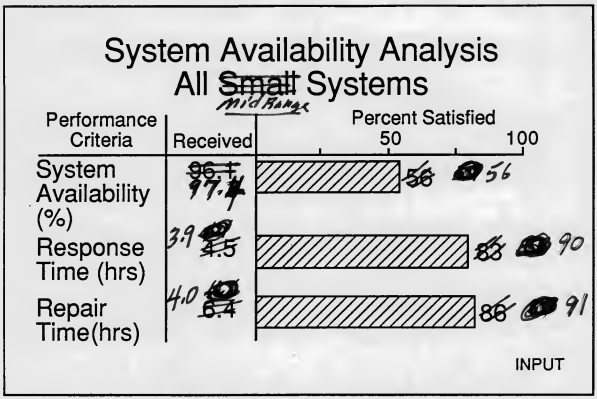

NOTES:

FPRB-39

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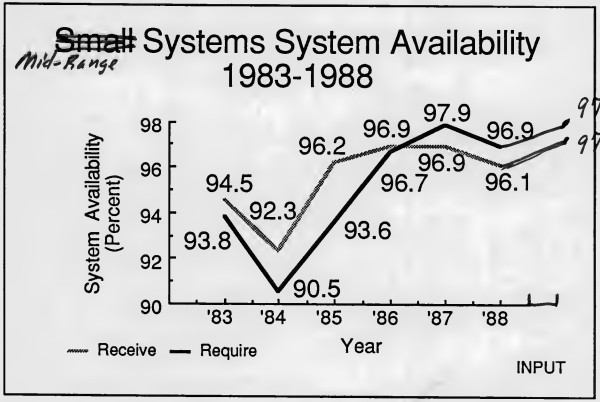

NOTES:

FPRB-40

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EXHIBIT VI-6

SYSTEM AVAILABILITY SATISFACTION AT EACH REQUIREMENT LEVEL ALL MID-RANGE SYSTEMS

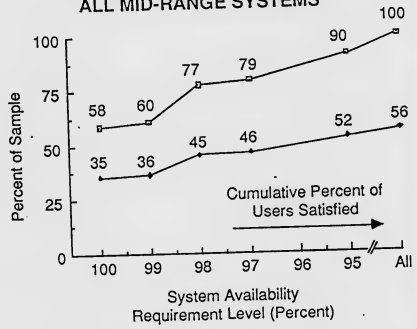

EXHIBIT VI-7

HARDWARE MAINTENANCE REQUIRED VERSUS RECEIVED ALL MID-RANGE SYSTEMS

Key	Service	Required Mean	Required SE	Received Mean	Received SE
A	HW Engineer Skill	8.9	0.1	8.3	0.1
B	HW Remote Support	7.8	0.2	7.3	0.1
C	Spare Parts	8.8	0.1	8.1	0.1
D	*HW Maintenance Overall*	*9.0*	*0.1*	*8.5*	*0.1*

SE=Standard Error

System Interruption Analysis
All ~~Small~~ Mid-Range Systems

System Interruptions (per Month)	~~1.2~~ .59
	Percent
Hardware Caused	~~56~~ 63
System Software Caused	~~15~~ 13
Applications Software Caused	~~8~~ 4
Other Caused (i.e., user-caused)	~~21~~ 20

INPUT

NOTES:

FPRB-42

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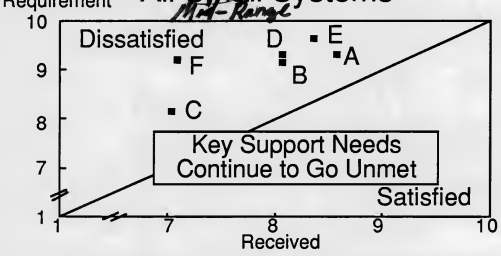
Key Service Requirements vs. Received
All ~~Small~~ Systems



A=Overall HW Maintenance
B=Overall SW Support
C=~~Overall Planning Services~~ HW Remote Support
D=Spare Parts Availability
E=SW ~~Product Reliability~~ Remote Support
F=SW Documentation
INPUT

NOTES: Replot

	Required	Received
A HW Maint	9.0	8.5
B - SW support	8.5	7.5
C - HW Remote Support	7.8	7.3
D Spare Parts Availability	8.8	8.1
E SW Remote Support	8.0	7.1
F SW Documentation	8.4	7.2

FPRB-43

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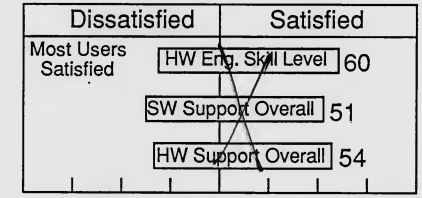
Mid-Range
~~Small~~ System User Satisfaction with High-Priority Services



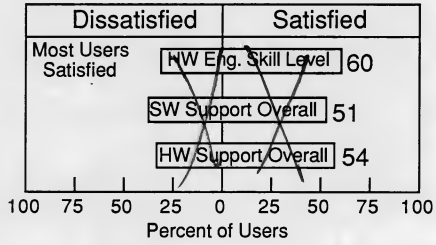
INPUT

NOTES:

HW Remote Support 63
HW Maint Overall 59
SW Eng. Skill 57

FPRB-44a

Mid-Range ~~Small~~ System User Satisfaction with High-Priority Services



INPUT

NOTES:

SW Remote Support 55

Spares Availability 54

HW Engineering Skill 54

SW Support Overall 51

FPRB-44a

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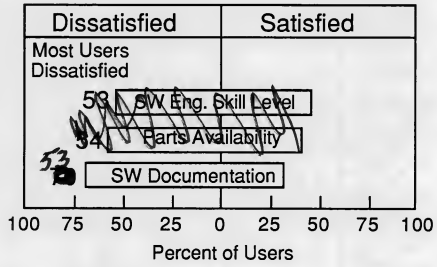
Mid-Range

~~Small~~ System User Satisfaction with High-Priority Services



INPUT

NOTES:

FPRB-44b

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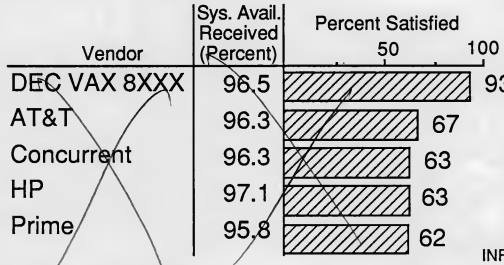
Systems Availability Performance—Mid-Range ~~Small~~ Systems



NOTES:

	Received	%
IBM 937X	97.5	74
Concurrent	97.8	73
Data General	96.8	73
Prime	97.4	68
IBM AS 400	98.0	67

FPRB-45

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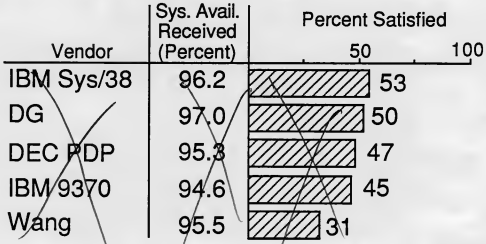
Systems Availability Performance—~~Mid-Range~~ ~~Small~~ Systems



INPUT

NOTES:

	Received	%
HP	96.9	65
AT+T	95.9	59
Tandem	99.0	43
DEC	97.1	39
Wang	98.4	3

FPRB-46

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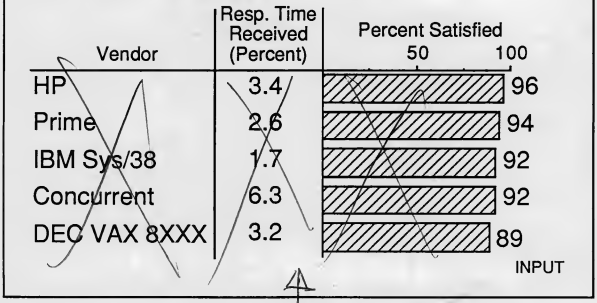
Response Time Performance—Mid-Range ~~Small~~ Systems



NOTES:

	Received	%
Tandem	1.6	100
HP	4.1	95
Data General	7.1	92
Wang	1.9	92
~~IBM AS 400~~	~~1.00~~	~~00~~
~~IBM 9370~~ X	~~1.0~~	~~00~~
Concurrent	5.3	90

FPRB-47

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Response Time Performance—Mid-Range ~~Small~~ Systems

Vendor	Resp. Time Received (Percent)	Percent Satisfied (50–100)
IBM 9370	1.7	86
DEC PDP	3.5	85
DG	3.6	81
AT&T	10.7	77
Wang	3.9	75

INPUT

Received

IBM AS400 1.0 89

NOTES:

IBM 937X 1.7 89

AT&T 11.3 85

DEC 2.1 85

Prime 2.2 83

FPRB-48

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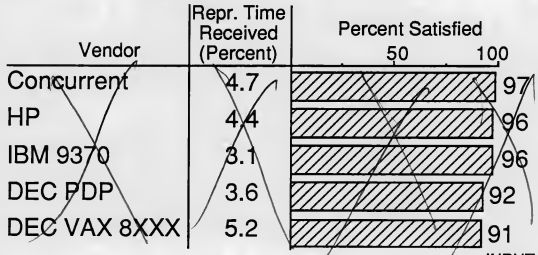
Repair Time Performance—Mid-Range ~~Small~~ Systems



	Received	%
Data General	4.1	97
Tandem	2.8	97
Wang	1.6	97
IBM AS 400	2.7	94
IBM 937X	2.9	93

NOTES:

FPRB-49

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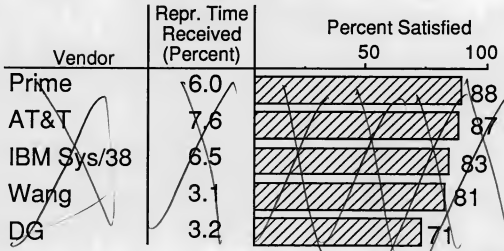
Repair Time Performance—
MID-RANGE ~~Small~~ Systems



NOTES:

	Received	%
DEC	3.6	90
HP	1.9	88
Concurrent	8.4	84
AT&T	9.0	83
Prime	2.9	68

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User Surveys

Third-Party Maintenance

INPUT

NOTES:

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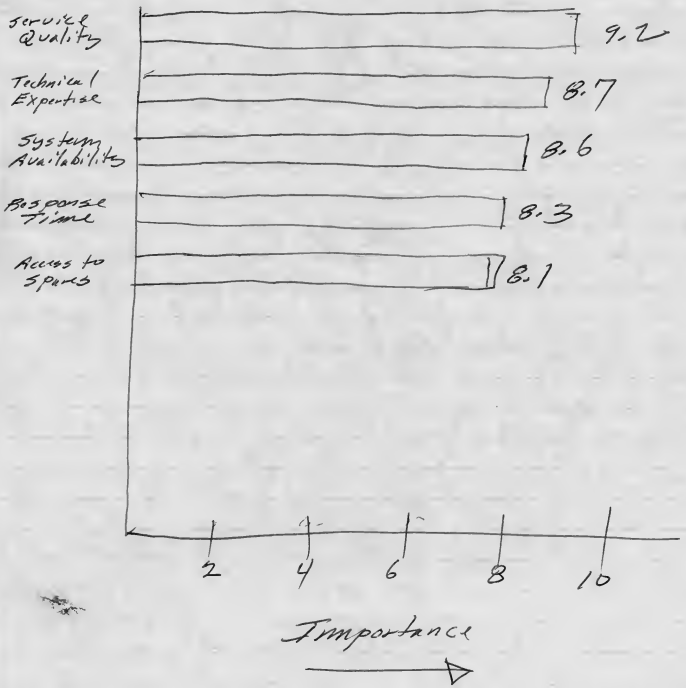
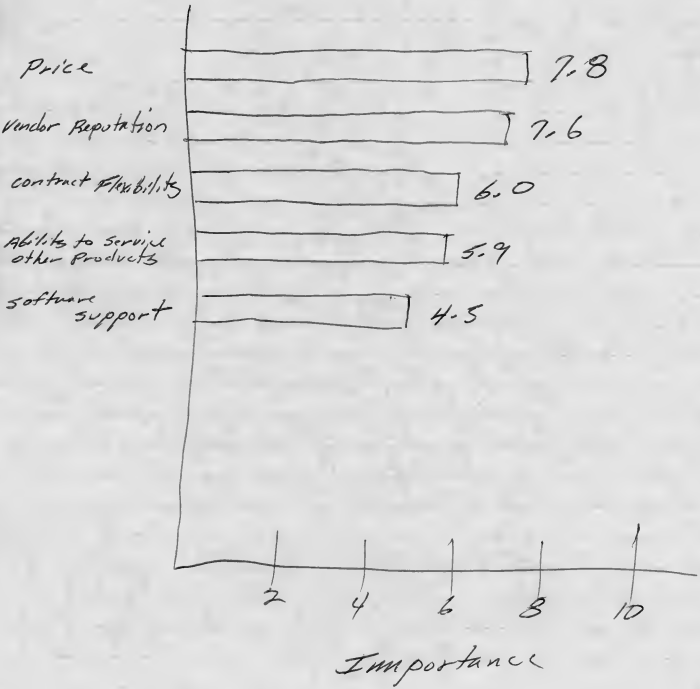
SERVICE VENDOR SELECTION CRITERIA

Third Party Maintainers



SERVICE VENDOR SELECTION CRITERIA
Third Party Maintainers



TPM Contract Coverage—All Users

Service Coverage	Sample (Percent)	
Days of Coverage	88	89
Monday—Friday	71	64
Monday—Saturday	4	2
Monday—Sunday	25	34

INPUT

NOTES:

FPRB-52a

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TPM Contract Coverage—All Users

Service Coverage	Sample (Percent)	
Hours of Coverage	88	89
1—9 Hours	62	53
10—16 Hours	9	12
17—24 Hours	29	35

INPUT

NOTES:

FPRB-52b

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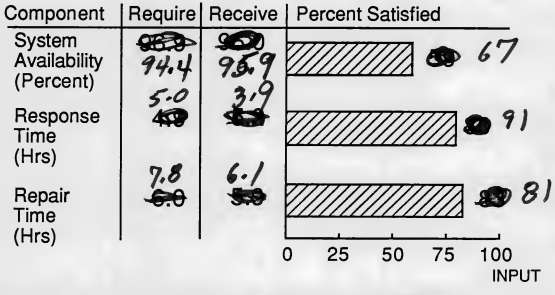
TPM System Availability Analysis—All Users



NOTES:

FPRB-53

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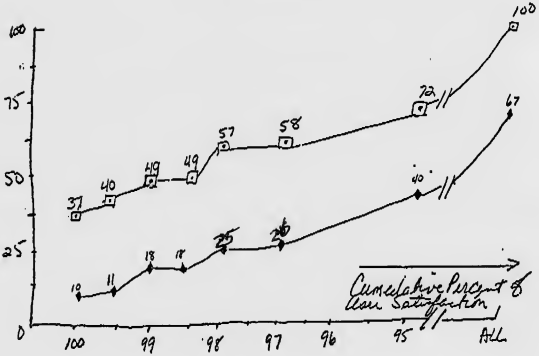
46

TPM
System Availability Satisfaction At Each Requirement Level
All Users



System Availability Requirement Level (Percent)

—□— Percent of Sample at Requirement Level
—◆— Percent of Users Satisfied at the Requirement Level

TPM System Interruption Analysis—All Users

System Interruptions (per Month)	1.2
	Percent
Hardware Caused	66
System Software Caused	9
Applications Software Caused	5
Other (i.e., User Caused)	20

INPUT

NOTES:

FPRB-55

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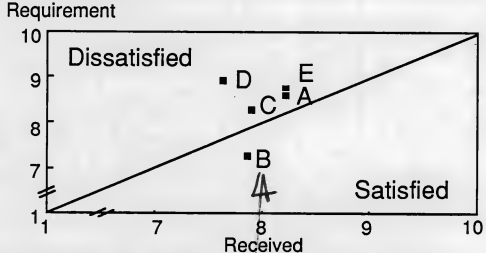
TPM Hardware Maintenance Required vs. Received, All Users



A=Hardware Engineer Skill
B=Hardware Remote Support Staff
C=Spare Parts Availability
D=Overall Hardware Maintenance

INPUT

NOTES:

Replot

	Required	Received
A Hardware Eng Skill	8.7	8.1
B Hardware Remote Support	4.1	7.0
C. Spare parts Availability	8.7	8.1
D. overall HW Maintenance	9.0	8.5

FPRB-56

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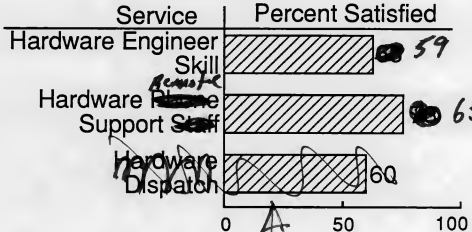
TPM Hardware Maintenance Satisfaction— All Users



NOTES:

FPRB-57a

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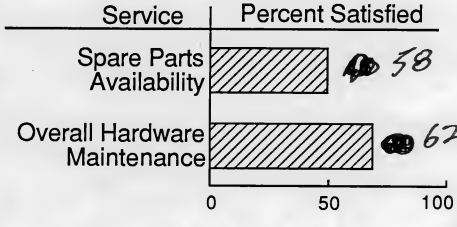
TPM Hardware Maintenance Satisfaction— All Users



NOTES:

FPRB-57b

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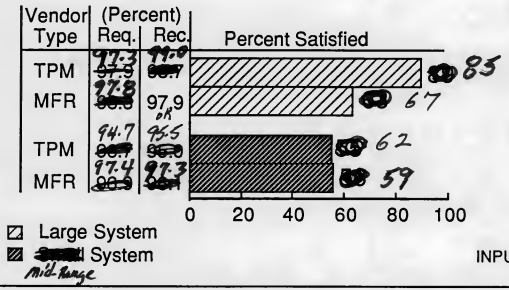
TPM Versus Manufacturer System Availability Performance



NOTES:

TPM 92.5 96.4 77%

MFC 94.0 95.7 73%

FPRB-58

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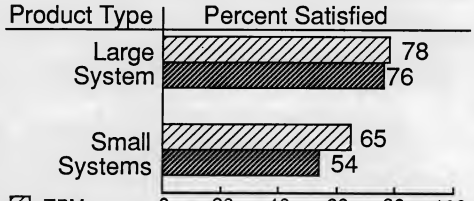
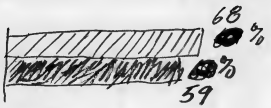
User Satisfaction With Hardware Maintenance— TPM Versus Manufacturer



NOTES:

PC/WS



FPRB-59

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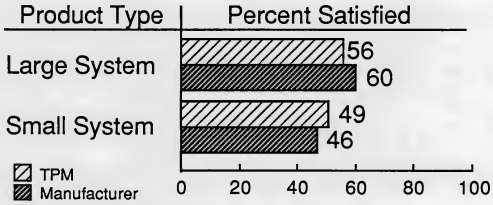
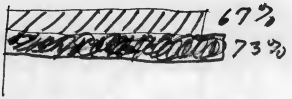
User Satisfaction with Parts Availability TPM Versus Manufacturer



INPUT

NOTES:

PC/WS



FPRB-60

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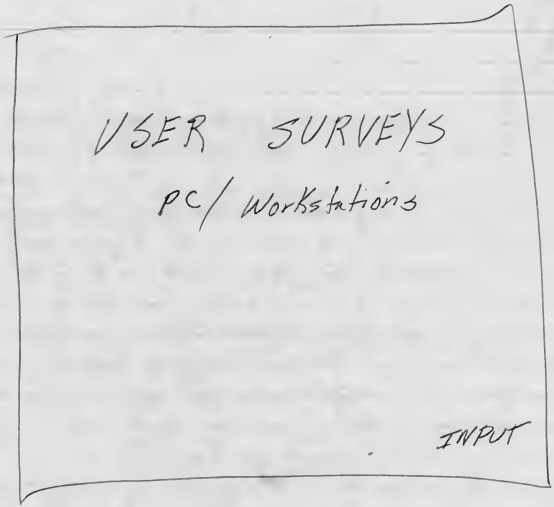
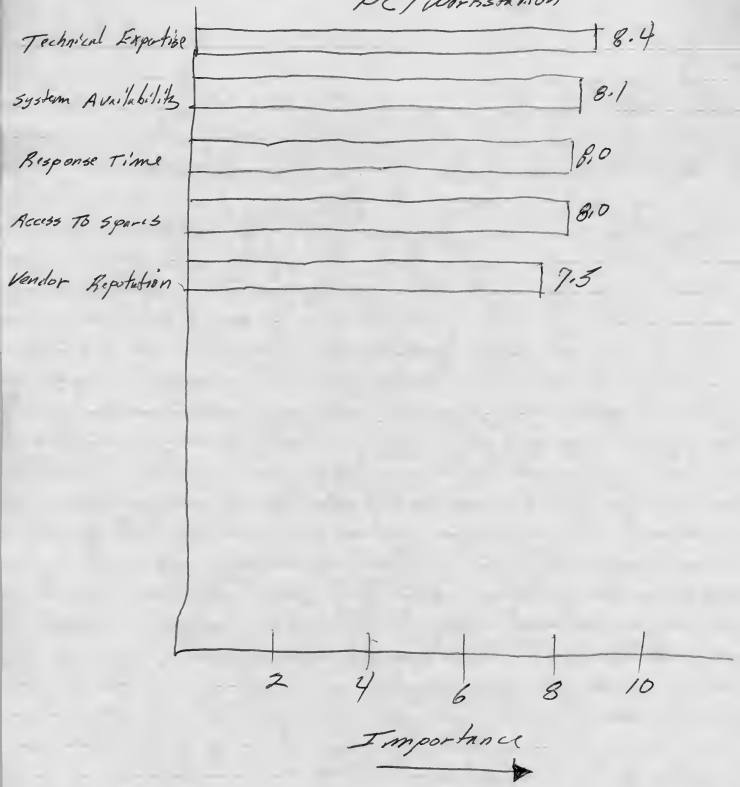
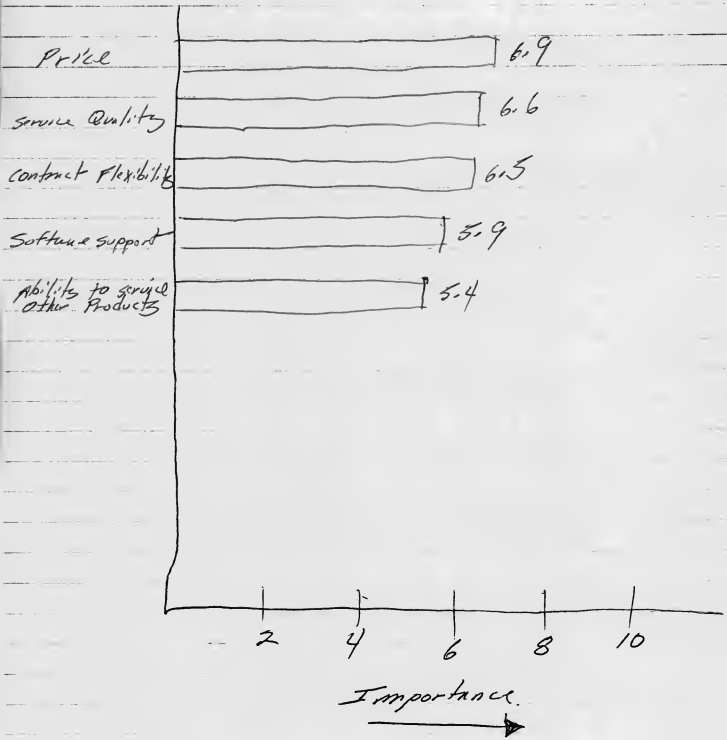

USER SURVEYS
PC/ Workstations
INPUT

SERVICE VENDOR Selection CRITERIA

PC/Workstation



SERVICE VENDOR Selection CRITERIA
PC/Workstation



~~EXHIBIT~~

57

Service Contract Coverage ~~of Users~~ PC/workstations

	1989		1988	
	PERCENT OF SAMPLE	SE	PERCENT OF SAMPLE	SE
DAYS COVERED				
MONDAY - FRIDAY	76			
MONDAY - SATURDAY	1			
MONDAY - SUNDAY	23			
HOURS COVERED				
1 - 9 HOURS	75			
10 - 16	4			
16 - 24	21			

~~EXHIBIT~~

Service Contract Coverage ~~Guidelines~~ PC/workstations

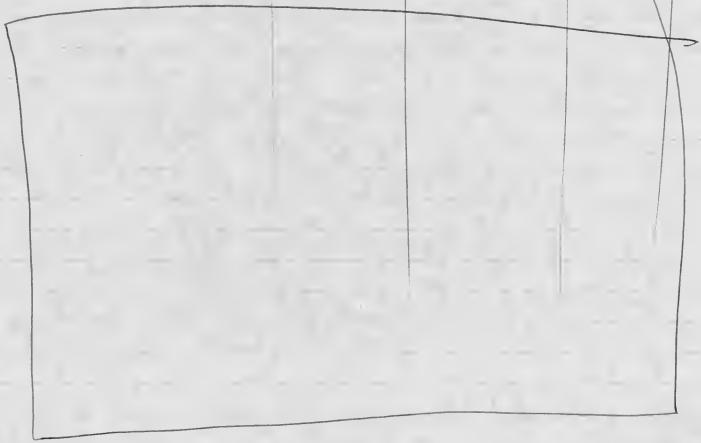
	1989		1988	
	Percent of sample	SE	Percent of sample	SE
Days Covered				
Monday - Friday	76			
Monday - Saturday	1			
Monday - Sunday	23			
Hours Covered				
1 - 9 Hours	75			
10 - 16	4			
16 - 24	21			

System Availability Analysis
PC / Workstations

Performance criteria	Received	Percent Satisfied
System Availability %	95.0	71
On-site Response Time (Hrs)	9.4	62
onsite Repair Time (Hrs)	7.0	69
Depot Turnaround Time (Days)	3.8	71

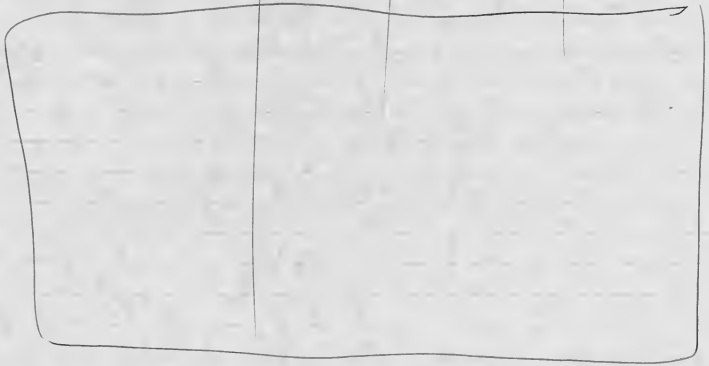
PC/workstations
System Availability Performance Analysis

	MFC	Dealers	TPM
System Availability (%)	95.7	95.0%	94.5
Response Time (Hrs)	11.3	11.1	7.1
Repair Time (Hrs)	6.9	3.9	8.9
Depot Turnaround (days)	4.6	2.2	3.3



PC / Workstations
Satisfaction Levels
% Satisfied

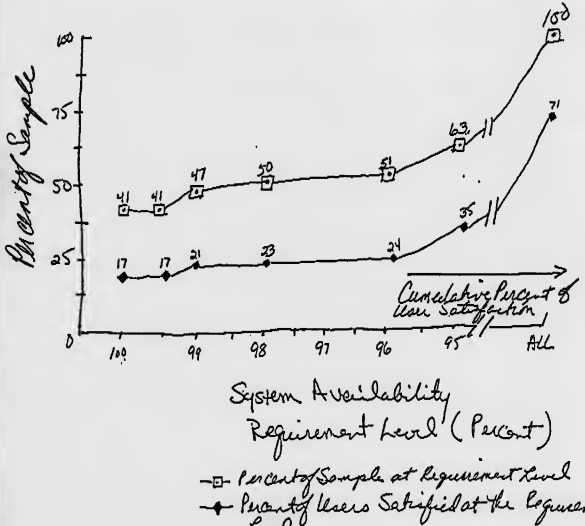
	MFC	Dealer	TPM
System Avail	73	61	74
Response Time	53	76	61
Repair Time	67	72	68
HW Maint overall	59	73	68



62

PC Workstations

System Availability Satisfaction At Each Requirement Level



~~EXHIBIT~~

63

SYSTEM INTERRUPTION ANALYSIS

~~[redacted]~~: PC/work stations

	1989		1988	
	MEAN	~~SE~~	MEAN	~~SE~~
SYSTEM INTERRUPTIONS PER MONTH	1.3	~~0.27~~		
HARDWARE-CAUSED	77	2.9		
SYSTEM SOFTWARE-CAUSED	8	1.8		
APPLICATION SOFTWARE-CAUSED	5	1.4		
OTHER-CAUSED	~~10~~ 10	2.1		

3

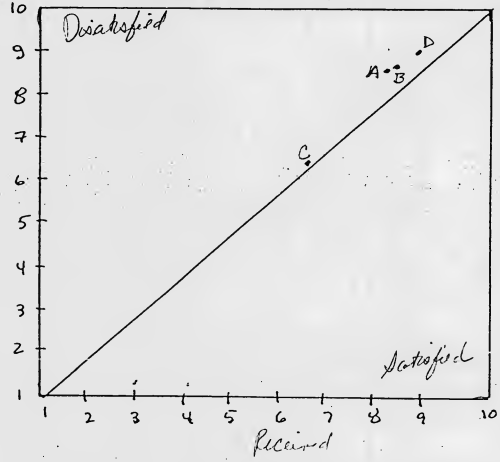
EXHIBIT -

~~HARDWARE MAINTENANCE~~

Key Service Requirements

~~REQUIRED VERSUS RECEIVED~~

~~[illegible]~~ PC/Work Stations

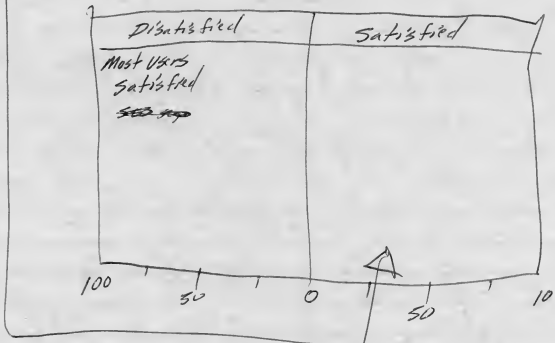


KEY	SERVICE	REQUIRED MEAN	REQUIRED SD	RECEIVED MEAN	RECEIVED SD
A	HW ENGINEER SKILL	8.5	0.1	7.9	0.1
B	~~HW REMOTE~~ Spare SUPPORT Parts	8.6	0.1	8.0	0.2
C	~~SPARE PARTS~~ Hot line Support	6.4	0.3	6.5	0.2
D	HW MAINTENANCE OVERALL	8.9	0.1	8.2	0.1

Legend at bottom of chart

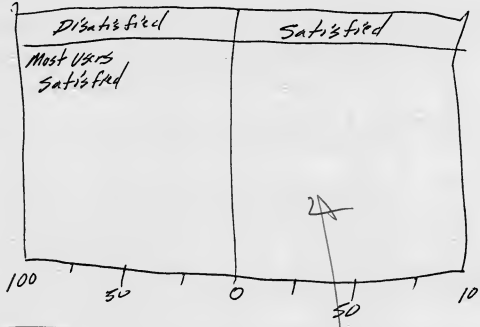
USE To Plot Histogram

PC / Workstation USER Satisfaction with High Priority Services



~~Operational Training~~ ~~Support~~	70	Satisfied
Hotline Support	69	"
HW Maint Overall	66	"
Spares Availability	65	"

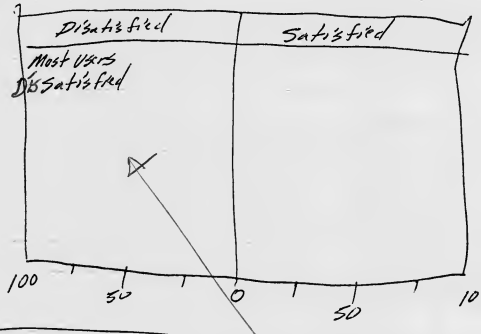
PC / Workstation USER satisfaction with High Priority Services



HW Engineer Skill 64 Satisfied

SW Remote support 52 Satisfied

PC / Workstation USER Satisfaction with High Priority Services



SW Documentation 52% Dissatisfied

SW Engineer Skill 51% Dissatisfied

SW Support Overall 51% Dissatisfied

Systems Availability Performance
PC/Workstations

Vendor	System Avail. Received	Percent Satisfied 50 100
Apollo (HP)	96.2	80%
Tandy	94.4	75%
IBM	93.7	73%
ALTOS	93.0	70%

INPUT

Notes:

Systemas Availability Performance
PC/Workstations

Vendor	system Avail. Received	Percent Satisfied 50 — 100
compaq	97.0	68%
Apple	94.6	68%
SUN	96.0	60%

INPUT

Notes: